



COLORADO SPRINGS,
COLORADO

JUNE 1994



Pikes Peak Radio Amateur Association, Inc.
P. O. Box 16521
Colorado Springs, Colorado 80935

FIRST CLASS MAIL



Ø BEAT



P.P.R.A.A Officers and Directors

| | | | | | |
|------------------|---------------------|-------|--------------------|-------|----------|
| President-- | Steve Westby | WV7VH | 1640 Keith Dr. | 80918 | 670-1070 |
| Vice-President-- | Al Vrooman | NØCMW | 1341 Diana Ln. | 80908 | 473-1660 |
| Secretary-- | Ken Phillips | NØNKP | 4860 Santlago Way | 80917 | 674-6368 |
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| Board Member-- | Ora Marie Rose | NØQJX | 5214 Colter Lane | 80916 | 591-6766 |
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| Ø-Beat Editor-- | Ron Deutsch | NKØP | 4305 Ridgelane Dr. | 80918 | 895-8111 |

ZERO BEAT is published monthly in the interest of the members of the Pikes Peak Radio Amateur Association, Inc., PO Box 16521, Colorado Springs, Colorado 80935. For membership and subscription information see last page of this publication. The Pikes Peak Radio Amateur Association meets monthly on the second Wednesday of each month at the Disabled American Veterans, Chapter 26, 6880 Palmer Park Blvd. at 7PM.

EDITOR: Ron Deutsch, NKØP, 4305 Ridgelane Drive, Colorado Springs, Colorado 80918 (719)593-8352

Deadline for submission of articles or ads is the 21st of each month. Submissions may be sent to the Editor or to the club PO box. Permission to reprint articles is granted provided credit is given to both the author and this publication.

ADVERTISING RATES: Full page \$46; half page \$24; quarter page \$12; business card \$6. These are monthly rates and are billed quarterly. Send your ad requests and payments to: PPRAA, PO Box 16521, Colorado Springs, Colorado 80935.

Committee Chairpersons, etc.

| | | |
|------------------|---------------------|----------|
| Publicity | Al Craig | 594-9288 |
| Membership | Les Borst | 634-3995 |
| Education | Al Bailey | 597-8514 |
| VE Testing | Rick Brown | 531-9423 |
| Interference | Bill Petty | 591-2116 |
| RACES | Doug Moloney | unlisted |
| ARES | John Chapman | 635-1604 |
| Skywarn | Steve Westby | 570-1070 |
| Public Service | Mike Stansberry | 636-1290 |
| CCARC | Oak Stockton | 570-7782 |
| Club Trailer | Harry Russell | |
| Newsletter | Ron Deutsch | 593-8352 |
| Club Historian | Al Craig | 594-9288 |
| Falcon Wanderers | Bob Nyman | 574-5161 |
| Programs | Steve Schaarschmidt | 598-3554 |
| Swapfest | Harvey Hunter | 597-8964 |

Reminder - June Meeting

The next meeting of the PPRAA will be held on Wednesday, June 8th at the Disabled American Veterans Hall located at 6880 Palmer Park Blvd. The meeting starts at 7:00 PM. The scheduled program is "Field Day."

VE Testing

Rick Brown - KDØSU

VE Testing is sponsored by the PPRAA on the 2nd Saturday of February, April, June, August, October and December. Testing takes place at 9:00 AM at:

Denver Technical College (DTC)
225 South Union
Colorado Springs

While we prefer pre registration, walk-ins are accepted on a space available basis. As a reminder to anyone wishing to take an examination you should bring the follow items.

1. \$5.75 (preferably a check made out to ARRL/VEC) for all exams other than elements 1A or 2.
2. Picture identification
3. A copy of your current amateur license as well as the signed original, or a copy of any examination credit you have.
4. Pen, pencils, and a calculator if you need one.

To pre register, or if you have any questions, please call me at 531-9423. Please do not call DTC, they only provide us the place, and do not have any of the information about testing.

OM YL LUNCH BUNCH

A very delightful luncheon was enjoyed by a record number of guests at the luncheon on may 19, 1994.

Our next luncheon will be on June 16, 1994 at 12:00 noon at the Home Town Buffet at the Shops of the Bluffs, so come and participate in some very lively discussions. C U There!

73's, Rosie Calaway, WA0MNL
The "smoked" HAM



PIKES PEAK RADIO AMATEUR ASSOCIATION

Swapfest '94

By S. K. Smith, KA7NNX

We came from all over,
Some far and some near,
All for the same reason
To barter our gear.

We won raffled prizes.
'Twas only dumb luck,
But many of us prayed
That our numbers come up.

We offered true bargains,
I swear, 'twas no con,
Waiting for prices to drop
As long hours wore on.

Our goods we were swapping,
For more or for cash.
At the end of the 'fest,
We counted our stash.

Then the profit was reckoned.
The deals were all made.
Alas! the sales tax
Still must be be paid!



General Meeting May 11, 1994

Treasurers Report
Previous Balance 996.19
Income 578.91
Expenses 284.79
New Balance 1290.31

The meeting was called to order at 7:00 PM by Steve WB7VHR. The treasurers report was submitted. The minutes were approved as published in *O Beat*.

CCARC: Oak KØROL is still seeking a co-delegate. Anyone interested please contact Oak at 591-5756, or catch him on the "52" frequency.

Public Service: Mike, KØTER wants to thank all those who made the walk for children a success. The **Tour De Cure** bicycle ride will be on the 25th of June. It is for the American Diabetes Association. We will depart from Falcon Elementary School and will feature a 26, a 52, and a 100 mile ride. We must provide communications for eight rest stops, Luci really can use some help with this. Upcoming events include the **Pikes Peak Hill Climb** on the 4th of July. Volunteers are still needed, including for the great opportunity to camp overnight. The **M.S. 150** from Highland Ranch to the Royal Gorge will be on July 9th and 10th. We expect our heaviest involvement (and greatest need) to be on the 9th. **Field Day** will be on July 24, 25, & 26 at the USAFA family camping area. For more information listen up on the 146.970 repeater at 7:00 PM for the ARES net or Contact Mike or Luci NØOD.

O Beat editor Ron Deutsch NKØP attended his last General Meeting as Editor. Chris, NXØE & Susan, KA7NNX will get out the next edition.

ARES: Mike, KØTER has stepped down as the district emergency coordinator. Jeff Ryan NØWPA will be the new coordinator and Mike will continue as the public service chairman.

RACES: This month we will have special training on government radios. This months meeting will be held on the 26th of May. We will return to the regular meeting times thereafter.

Listen up on the frequencies and times published on the centerfold calendar.

Hammy was awarded to Bob Armstrong WA4SVJ for being such a helpful "Elmer" for new operators.

Swapfest chairman Harv, WA3EIB says the swapfest is progressing well. We have almost no tables left. We are anticipating a good swapfest.

The program was given by Jim Maxwell on hydrology, which is the study of rainfall an how floods are projected. The June meeting will be about field day.

Submitted by Ken NØNKP Club Secretary

Board Meeting May 16, 1994

The meeting was called to order at the QTH of Steve, WB7VHR at 19:00. The following members attended. Steve WB7VHR, Al NØCMW, Tom NØNTX, Ken NØNKP, Ora NØQJX, Ron NKØP, filling in for Liz, NØTUK, Luci NØOD, Steve KØCI, Malcom, KE9S, Harv, WA3EIB, Chris, NXØE and Mark Andrews, KGØBC.

Harv said we have only three tables left for the swapfest. The board decided to order an additional 500 raffle tickets to assure we would not run out. The majority of the meeting time was discussing other administrative details and work assignments for the swapfest.

Mark Andrews asked for, and received the boards sponsorship to apply for a college scholarship through the ARRL.

The Board discussed field day and allocated \$150.00 for the breakfasts, and authorized renting three Scamp trailers, and two "Porta-Potties".

Submitted by Ken NØNKP Club Secretary



Swapfest Update

KBOLUX, Steve Goodwin won the TS 50 radio at the PPRAA Swapfest. Steve says that he is a new old-timer. He received his first license in 1959. He let that expire and passed the test again for a new ticket in 1978, then did it again in December 1993. He adds, "This time I'm going to keep it." His rig prior to now is a Heathkit HW 16 - tubes, 3 bands and crystal controlled.

Steve appreciates winning such a great prize and wants to thank the PPRAA for providing it, and thanks Rosie as well for selling him the winning ticket!

Stanley Bigham, N5PDM, also sends his thanks for winning the second prize, "Thanks for the HT-22A Kenwood. It will be used a lot by my wife (N5PGP) and I. We sure thank the PPRAA club."

As Raffle Chairperson I want to thank the club members for all the help they provided to make the Swapfest a success. 2,520 raffle tickets were in the barrel, more than 300 over last year. I was impressed with the help. Most people worked at more than one place when needed. I extend my thanks and I'm sure I speak for the club membership when I say a big thanks to W3EIB, Harvey and everyone connected with Swapfest. We thank the people who came, who bought tickets, donated prizes, worked so hard and had fun doing it. How about next year, Harvey?

WA0MNL, Rosie

Dits and Bits

Garage Sale - Items left over from the Swapfest Boutique table, along with other assorted "goodies" will be offered for sale at the garage sale, June 17th and 18th, 8 AM till 5 PM, at the QTH of **KB0FNM**, Russ and **WA0MNL**, Rosie 616 North 31st Street, Colorado Springs **K0QI**, Faye, and **KA0PXE**, Connie thought this would be a good way to offer the items for sale. All proceeds go to the club. The coffee pot will be on, so you all come. (WA0MNL)

For Sale - Drake TR-7 transceiver with 2500 Hz, 1800 Hz, 250 Hz filters, MS-7 speaker, mike and PS-7 (heavy duty) power supply and keyer. \$650 - call Chris, NX0E at 719/495-0624.

For Sale - Tri-band beam, Hy-gain TH-3 three element beam, 40 foot tower, Ham-M rotor with control, FOB the NX0E QTH. \$150 - call Chris, NX0E at 719/495-0624.

For Sale - One QTH with house, front yard big enough to hold the PPRAA field day gathering and tower with beam (if you act soon). Call Chris NX0E or Larry Krueger at 719/635-8317.

Field Day - The expression "To have a field day" means to enjoy oneself as if the time were a special festive occasion, a holiday — from *The Facts on File, Encyclopedia of Word and Phrase Origins*. This year's ARRL Field Day will be held on June 25 and 26. The PPRAA will participate at the campgrounds of the US Air Force Academy. Plan to be there!

June 1994

PIKES PEAK RADIO AMATEUR ASSOCIATION

SUNDAY

MONDAY

TUESDAY

WEDNESDAY

THURSDAY

FRIDAY

SATURDAY

| | | | | | | |
|------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|--------------------------------------------------------------------------------------|------------------------------------------------------------------------|-----------------------------------------------------------------|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | 1 8:00pm SCTN 146.97 | 2 7:30pm CMRG Info Net 147.345 8:00pm SCTN 146.97 | 3 8:00pm SCTN 146.97 | 4 7:00am Village Inn Breakfast 7:30am Breakfast Country Kitchen Widefield (W2TJO) 8:00pm SCTN 146.97 |
| 5 8:00am COLORADO ARES NETS 3928.0 6:30pm RACES HF NET 3990.5 8:00pm SCTN 146.97 | 6 8:00pm SCTN 146.97 | 7 7:00pm ARES NET 146.97 7:30pm RACES NET 146.97 8:00pm SCTN 146.97 | 8 7:00pm PPRAA Meeting DAV "Field Day" 8:00pm SCTN 146.97 | 9 CMRG Info Net 147.345 8:00pm SCTN 146.97 | 10 8:00pm SCTN 146.97 | 11 7:00am Village Inn Breakfast 7:30am Breakfast Country Kitchen Widefield (W2TJO) 8:00pm SCTN 146.97 |
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| 19 8:00am COLORADO ARES NETS 3928.0 6:30pm RACES HF NET 3990.5 8:00pm SCTN 146.97 | 20 O.B.E.A.T. DEADLINE 8:00pm SCTN 146.97 | 21 7:00pm ARES NET 146.97 7:30pm RACES NET 146.97 8:00pm SCTN 146.97 | 22 8:00pm SCTN 146.97 | 23 7:30pm CMRG Info Net 147.345 8:00pm SCTN 146.97 | 24 8:00pm SCTN 146.97 | 25 Tour de Cure 7:00am Village Inn Breakfast 7:30am Breakfast Country Kitchen Widefield (W2TJO) 8:00pm SCTN 146.97 Field Day @ Air... |
| 26 8:00am COLORADO ARES NETS 3928.0 6:30pm RACES HF NET 3990.5 8:00pm SCTN 146.97 Field Day @ Air... | 27 8:00pm SCTN 146.97 | 28 7:00pm ARES NET 146.97 7:30pm RACES NET 146.97 8:00pm SCTN 146.97 | 29 8:00pm SCTN 146.97 | 30 7:30pm CMRG Info Net 147.345 8:00pm SCTN 146.97 | | |

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MONTHLY EVENT CALENDAR

July 1994

PIKES PEAK RADIO AMATEUR ASSOCIATION

SUNDAY

MONDAY

TUESDAY

WEDNESDAY

THURSDAY

FRIDAY

SATURDAY

| | |
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| 1 8:00pm SCTN 146.97 | 2 7:00am Village Inn Breakfast 7:30am Breakfast Country Kitchen Widefield (W2TJO) 8:00pm SCTN 146.97 |
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| 21 | 22 | 23 | 24 | 25 | 26 | 27 |
| 28 | 29 | 30 | 31 | | | |

MONTHLY EVENT CALENDAR

SpaceNews

MONDAY MAY 23, 1994

SpaceNews originates at KD2BD in Wall Township, New Jersey, USA. It is published every week and is made available for unlimited distribution.

* LUSAT-1 CRASH RECOVERY UNDERWAY *

On 16-May-94 while LU1JBR and other stations were operating LUSAT-1 (LO-19), the satellite's downlink vanished, a result of an on-board computer crash. By 17-May-94, LUSAT-1 command station (operated by Norberto Pennini, LU8DYF), successfully reset the satellite. Norberto will start a series of deep tests and studies in order to find the origin of the crash. Reloading of operating software will follow the study. Please note that the satellite will not be operational for regular users for the next 7 to 30 day period.

LUSAT-OSCAR-19 controllers would like to thank LU8DYF and other stations who, in a way or another, collaborated and made this operation a success, including: LU6DYD, LU7AKC, LU7DSU, LU8ENU, LU4AGC, LU1EXC, LU2BDT, LW1EEO and LU3AGY. [Info via Eduardo Sweet, LU7AKC]

* AMSAT CALL FOR PAPERS *

Share your experience with the amateur satellite community at the 1994 AMSAT-NA Annual Meeting and Space Symposium scheduled for 07-Oct-94 through 09-Oct-94 in Orlando, Florida. Come help celebrate AMSAT's 25 year presence in Space. Your help is needed to make this meeting a success. Papers for this meeting are sought. Editing, formatting, graphics and even typing can be provided if required. Prepare a paper and advance your reputation among others involved in the Amateur Satellite program! Even if you cannot attend the meeting, consider a paper for publication. Topics for all amateur satellite disciplines are sought. Author and Title requested ASAP. Compose a short abstract by July 1. Final drafts are requested on or about August 26. Direct inputs and inquiries to: Steve Park - WB9OEP 12122 99th Ave. N. Seminole, FL 34642 Phone: (813) 391-7515 Internet: SKPA@QMGATE.ECI-ESYST.COM Amateur

Packet Radio: WB9OEP @
W4DPH#TPA.FL.E1.870W

Join us in Orlando, Florida for the fun and festivities!

[Info via Steve Park, WB9OEP]

* CLEMENTINE FAILURE *

After successfully completing a mission using advanced ballistic missile defense technologies to map the entire surface of the moon, the Ballistic Missile Defense Organization's Clementine satellite suffered an on-board malfunction at 9:39 AM EST on 07-May-94. The likely result of this malfunction will be to prevent Clementine from performing the planned close fly by of the near-Earth asteroid Geographos in August 1994, and for the satellite to point its cameras and sensors.

Preliminary analysis has traced the cause of the malfunction to the on-board computer which controls most of the satellite's systems including the attitude control thrusters. The computer activated several thrusters during a 20 minute telemetry interrupt with the ground station, thus depleting all the fuel in the Attitude Control System (ACS) tanks. It has not been determined as yet whether the fault was in the computer software or in the computer's electronic chips. The primary processor on the computer is a radiation hardened Military Standard 1750A computer, which is not experimental technology.

Clementine's mission control center in Alexandria, VA, is continuously monitoring the satellite. It has been determined that all instruments and systems are continuing to function well with the exception of the ACS.

Although it may be difficult to Clementine to make the close fly by of the asteroid, the satellite will continue to perform its intended military mission to test 23 advanced technologies. The Clementine engineering team is examining several mission options which would continue to yield useful data. Since January 25, 1994, Clementine's cameras have recorded over 1.5 million images including the topographical surface of the moon. Analyzing this data, including results of the search for the existence of ice on the lunar surface, will continue to occupy scientists for many years.

The Clementine project is managed by BMDO, built by the Naval Research Laboratory, and its

instruments constructed by industry and the Lawrence Livermore Laboratory. It has been a landmark project since it demonstrates that small, highly capable satellites can be built and launched for under \$100 million and in less than two years, using advanced miniaturized technology and a streamlined management approach.

[Info via Richard H. Buenncke Jr.]

* DISCOVERY OF ASTEROID MOON *

NASA's space probe Galileo has discovered what is probably the first known moon of an asteroid. Since Galileo passed the asteroid, Ida, on August 28, 1993, the probe has continued to send back images and data from the near infrared mapping spectrometer. Because of the great distance at which the probe is from Earth, downloading this data will continue for months to come.

The Galileo Project Scientist, announced on March 3, 1994, the discovery of a "blip" consisting of more than a few pixels visible in data from both the solid-state imaging system and the spectrometer.

Based on simultaneous observation, a natural moon may be in orbit around Ida. If so, this would be the first satellite of an asteroid to be discovered.

More information will be forth coming soon from NASA, along with the first images of this possibly new moon orbiting Ida.
[Info via Dave, N9JUW]

* ECLIPSE IMAGE AVAILABLE VIA FTP *

= A collection of images taken of the 10-May-94 annular solar eclipse have been assembled into a single file and is available via anonymous FTP at: <ftp.uleth.ca> (IP # 142.66.3.29). The image is called "eclipse.gif" and is located in the "pub/solar/Images" directory at this site. The frame contains 24 high-quality images taken by the Big Bear Solar Observatory. All but three are full-disk hydrogen-alpha and Ca II K images, giving excellent views of existing features visible on the Sun (regions of enhanced plage, filaments, etc). The other three images are high-resolution close-up images of the Sun showing craters and mountain ranges against the background of the solar surface. "eclipse.gif" is a large 1500 x 1297 x 256 image that will

make good use of large high-resolution monitors.

The folks at the BBSO did a great job capturing these images, and deserve a nice pat on the back for covering the event so well.

"eclipse.gif" is in a semi-permanent state. That is, it will not be removed from the FTP disk for a few months.

[Info via Cary Oler]

* RS-10 NEWS * ----- VE3CIQ

in Canada reports that RS-10 is working quite well in Mode A. In one Atlantic pass, he made contact with FG5GI from Guadeloupe Island, ON2ATB from Belgium, and N1MCT from Maine, USA using 25 watts of transmitter power. VE3CIQ reports he can hear himself with only 5 watts.

[Info via VE3CIQ]

* SpaceNews IN SPANISH *

Pedro Jose, EA4ADD in Spain is translating SpaceNews issues into the Spanish language and circulating the translated issues throughout the LATNET (Latin America) and the EA (Spanish) packet radio networks.

My thanks to EA4ADD for taking the time to translate SpaceNews into Spanish.

* THANKS! *

Thanks to all those who sent messages of appreciation to SpaceNews, especially:

ON1AOT VK2XC1 VE3CIQ EA4ADD
N6UVY WB9OEP W0XK

* FEEDBACK/INPUT WELCOMED *

Mail to SpaceNews should be directed to the editor (John, KD2BD) via any of the following paths:

FAX 1-908-747-7107 PACKET KD2BD @ N2KZH.NJ.USA.INTERNET:

kd2bdi@ka2ghd.de.com -or- kd2bd@amsat.org

MAIL John A. Magliacane, KD2BD
Department of Engineering and Technology
Advanced Technology Center Brookdale
Community College Lincroft, New Jersey
07738 U.S.A.

<<= SpaceNews: The first amateur
newsletter read in space! ==>>

Digital Communications

by Presley Smith, N5VGC

Setting Up Your Packet Station

/ Presley writes monthly packet radio columns for the Plano, TX Amateur Radio Klub (PARK). It was well written and timely, so it is presented for the enjoyment of Q-Heat readers - ed. /

You must have at minimum a 2M FM transceiver (a HT will do fine), either a computer or a terminal, and a Terminal Node Controller (TNC).

For the radio, anything from an all mode 2M set to a HT will be fine. I picked up an old Kenwood 21AT with 3W of power at the swap meet for my first packet radio. I hooked it to a 12V source, used the ducky at first but then put a 5/8 wave ground plane antenna on the roof to get more range. So, the transceiver doesn't have to be fancy to get started. If you've got a 2M set, you've got the radio. Magazine articles exist to tell you how to interface HT's such as the new Radio Shack HT with packet. (CQ, April, 1992)

2m packet stations operate on 1200 baud so a standard FM transceiver can be used. Most 2M packet is also on simplex channels. For HF packet, 300 baud data is used with SSB. I'll discuss the equipment requirements for packet satellite operation in a future column.

Next, you need either a computer or a terminal for the user interface. A computer running a terminal program or just a dumb terminal can be used. For computers, any phone modem communications program can be adapted for packet use or customized packet radio programs are available. I have used PROCOMM that I use for phone modems with my packet system with no problem. I prefer terminal programs such as PACKCOM or LAN-LINK which have features specifically for packet work. Many packet programs are available on the phone BBS's

The advantage of a computer is that you have a place to store messages that you receive, and you can compose your messages before you get on the air. My spelling and grammar are much bet-

ter if I compose the message first and then transmit it.

Finally, you need a TNC (Terminal Node Controller). A TNC contains a modem to decode the audio signals into digital signals. It also contains a micro-computer handle to convert the digital signals into text that can be sent over a RS-232 port to the computer or terminal. The CPU also handles the protocol overhead of the packet station. When you send data, it takes the text, puts error checking on it (CRC) and also puts it in an envelope for sending. When receiving a signal, it takes the data out of the envelope,

and sends the message to the computer.

TNCs range from simple demodulators that let the computer do all the work to the most sophisticated DSP units that are now available on the market.

1. Baycom and Baypac modem consist of a demodulator system that is placed between the radio and the computer RS232 port and software in the computer does all the work. Cost less than \$100.
2. Standard TNC's with the modem and CPU in the unit are available in many "flavors" from the AEA PK 88 at about \$130 on up to the top of the line TNC, the AEA PK232 MBX at about \$350 retail. Kantronics, PacComm, and MFJ all produce several different models of TNCs that range in price from \$130 to \$350.
3. The newest TNCs on the market are the DSP units from AEA or L.L. Grace. These units use high speed Digital Signal Processing (DSP) chips and those chips are programmed to perform the various TNC functions. And you can purchase development kits to do your own if you desire. Price range about \$750 to \$900.

How do you determine what TNC is right for you? Perhaps a future column could cover this issue.



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Reminder! This is the members' newsletter. Should you see, or hear, or read something you think would interest others, send it in!

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